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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,512	07/28/2003	Masuhiro Natsuhara	39.018-AG	1511

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EXAMINER	
KACKAR, RAM N	

ART UNIT	PAPER NUMBER
1763	

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/604,512	NATSUHARA ET AL.	
	Examiner	Art Unit	
	Ram N. Kackar	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/30/2006 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 and 3-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In this instance the claimed radial distance between the electrode and the periphery of the wafer holder being greater than 2.5 mm and less than about 25 mm is considered new matter for the following reason.

There is no appreciation in the specification about the distance being greater but not equal to 2.5 mm.

Further there is no appreciation of any specific advantage of this range in view of the fact that in all the examples of the specification diameter of the wafer holder is 350 mm for supporting a wafer of 300mm and the claimed distance is what ever is left after fabricating the electrode according to the invention. Therefore as long as the size ratio between the wafer and the electrode is 90% remaining distance of the electrode to the periphery does not matter.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Niori et al (US 6197246).

Niori et al disclose a wafer holder for a semiconductor manufacturing equipment (Fig 7) and disclose an RF electrode (30) of round shape built in the wafer holder. The electrode circuit diameter is disclosed slightly greater than the wafer (Fig 7). The distance between the electrode and the wafer-carrying surface (Fig 4-16 *called wave permeation layer*) being 1mm maximum (Col 15 lines 51-54). The electrode is disclosed to be at least 200mm (Col 19 lines 7-11) and the diameter of the holder 205 mm (Col 19 lines 32-36). Therefore the distance of electrode to the

periphery of the holder (2.5 mm) is disclosed greater than the distance between the electrode and the wafer-carrying surface.

Regarding the diameter of electrode being more than the diameter of the wafer it is more than the diameter of a standard wafer of 150mm.

Further regarding the claim that radial distance between the electrode and the periphery of the wafer holder is greater than 2.5 mm but not 2.5 mm exact, it is held that where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device. In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). In this instance it is clear that the distance between the electrode and the periphery of the wafer holder does not affect the performance.

6. Claims 1, 3-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Divakar et al (US 20020185487).

Divakar et al disclose a wafer holder for a semiconductor manufacturing equipment (Fig 1 and Para 02) and disclose an RF electrode (15) of round shape built in the wafer holder. The electrode circuit diameter is disclosed greater than the wafer (Fig 1). The distance between the electrode and the wafer-carrying surface appears to be smaller than the distance of electrode to the periphery of the holder.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niori et al (US 6197246) in view of Shamouilian et al (US 20010003298).

Niori et al disclose a wafer holder for a semiconductor manufacturing equipment (Fig 7) and disclose an RF electrode (30) of round shape built in the wafer holder. The electrode circuit diameter is disclosed slightly greater than the wafer (Fig 7). The distance between the electrode and the wafer-carrying surface (Fig 4-16 *called wave permeation layer*) being 1mm maximum (Col 15 lines 51-54). The electrode is disclosed to be 200mm (Col 19 lines 7-11) and the diameter of the holder 205 mm (Col 19 lines 32-36). Therefore the distance of electrode to the periphery of the holder (2.5 mm) is disclosed greater.

Regarding the size of electrode as it is disclosed to be 200mm it is same as that of a standard wafer of 200mm. However if the size of the wafer is 300mm Shamouilian et al teach that the electrode size could be 70,000 mm^2. Further Shamouilian et al recognize the relation ship of electrode size with respect to wafer size for uniformly coupling RF energy and teach that it should be sufficiently large. Therefore electrode size is recognized as a result effective parameter in the context of MPEP 2144.05 II B and is therefore obvious to optimize.

Therefore it would have been obvious for one of ordinary skill in the arts at the time of invention to have an electrode of sufficiently large size in order to uniformly couple RF energy to the processing gas.

Regarding the claim that radial distance between the electrode and the periphery of the wafer holder is greater than 2.5 mm but not 2.5 mm exact, it is held that where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device. In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). In this instance it is clear that the distance between the electrode and the periphery of the wafer holder does not affect the performance.

Response to Arguments

Applicant's arguments filed 3/30/2006 have been fully considered but they are not persuasive.

Applicant's arguments are properly addressed in the body of the rejection and are not repeated here.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ram Kackar
Primary Examiner AU 1763